AGROMYZIDAE

By K. A. SPENCER

SYNOPSIS

This paper is based on 34 specimens collected by R. L. Coe during the 1961-62 British Museum Expedition to East Nepal. Eight species are represented. Two of these are described below as new, one being placed in a new genus, *Lemurimyza* ; five were previously known from the Oriental region and one, *Phytoliriomyza australensis* Spencer, has previously only been recorded in Australia and Tahiti.

References not included will be found in full in my synopsis of Oriental species (Spencer, 1961).

Genus ***JAPANAGROMYZA*** Sasakawa

Japanagromyza trispina (Thomson) **comb. nov.**

Agromyza trispina Thomson, 1869.
Agromyza variihalterata Malloch, 1914. **syn. nov.**
Japanagromyza variihalterata (Malloch) Spencer, 1960 : 17.

Taplejung Dist., Sangu, c. 6,200′, 1 ♀, ix-x.1961.

I have recently examined the holotype of *Agromyza trispina* in the Naturhistoriska Riksmuseum, Stockholm. This is a female in good condition which is clearly identical with the widespread Oriental species, *J. variihalterata* (Malloch) ; *variihalterata* is therefore synonymized with *trispina* herewith. The type locality of *trispina* is given as " China ", and is presumably somewhere on the southern seaboard ; *J. variihalterata* was described from Formosa.

Genus ***MELANAGROMYZA*** Hendel

Melanagromyza metallica (Thomson)

Agromyza metallica Thomson, 1869.
Melanagromyza metallica (Thomson) Spencer, 1959.

Arun Valley, Tumlingtar, East shore of Riv. Arun below Tumlingtar, 1,800′, 1♂, 2 ♀, 14-23.xii.1961. Taplejung Dist., Dobhan, c. 3,500′, Riv. Maewa, 1♂, 2.i.1962 ; Sangu, c. 6,200′, 1 ♀, 16-29.x.1961 ; 1 ♀, ix-x.1961.

The biology of this widespread species has recently been clarified. In November 1962 I found larvae in stems of *Ageratum conyzoides* L. at Delhi but failed to breed any adults ; in January 1963 V. K. Sehgal, who was collecting with me at Delhi, found some more larvae in the same host (India : Bihar, Namkum, Ranchi,) and the adults sent to me for examination proved to be *metallica*. Sehgal has subsequently bred the species also from *Bidens pilosa* L. and it no doubt also occurs in other Compositae.

Melanagromyza phaseoli (Tryon)

Oscinis phaseoli (Tryon) Spencer, 1895.
Melanagromyza phaseoli (Tryon) Spencer, 1959.

Taplejung Dist., between Sangu and Tamrang, c. 5,500′, 1 ♀, 23.x.1961.

Genus ***CERODONTHA*** Rondani

Nowakowski (1962) has recently transferred the sub-genus *Icteromyza* from *Phytobia* to *Cerodontha* and I here follow this new classification.

Cerodontha (*Icteromyza*) *duplicata* (Spencer), **comb. nov.**

Phytobia (*Icteromyza*) *duplicata* Spencer, 1961.

Taplejung Dist., between Sangu and Tamrang, shrubs by path, c. 5,800′, 1 ♂, 1 ♀, 6.xi.1961 ; dense vegetation in tree shade by hill stream, 3 ♂, 3 ♀, 23.x.1961 ; Sangu, c. 6,200′, mixed vegetation by stream in gully, 2 ♂, 1 ♀, ix-x.1961 and xi.1961-i.1962 ; on yellow blooms of cultivated Composite, 2 ♂, 16-29.x.1961 ; below Sangu, c. 4,000′, mixed vegetation on sheltered slopes above river, 1 ♂, 2 ♀, 3.i.1962 ; river banks below Tamrang bridge, c. 5,500′, 1 ♂, x-xi.1961 ; edge of mixed forest above Sangu, c. 6,500′, 3 ♀, 17.x.-1.xi.1961.

This series represents the second record of this species which was described from a single male from INDONESIA : Flores.

Genus ***LIRIOMYZA*** Mik

Liriomyza compositella Spencer

Liriomyza compositella Spencer, 1961.

This leaf-miner on Compositae is widespread in the Oriental Region. In November 1962 I bred a long series from leaf-mines on *Xanthium strumarium* L. at Delhi.

LEMURIMYZA gen. n.

(*Lemuria* and *myza*)

(Text-figs. 52–58)

Frons broad, one and a quarter to twice width of eye, two upper fronto-orbital bristles, one lower ; orbital setulae minute, proclinate, upright, reclinate or lacking ; acrostichals sparse, in only two rows ; small species, wing length 1·75 to 2·3 mm. ; sub-costa reaching costa independently of vein r_1, costa extending to vein M_{1+2}, second crossvein present. Colour : head largely yellow, third antennal segment yellow or black ; mesonotum black but with yellow patch in centre before scutellum ; scutellum yellow, at least centrally ; halteres black or yellow. ♂ GENITALIA : distiphallus in form of characteristic paired tubules (Text-figs. 53, 56, 58), mesophallus dark, cylindrical, surstyli separated by wide suture from ninth tergite, bare or with a few hairs and/or spines, linked to basal end of ninth tergite by strong, black, comb-like process (Text-figs. 54, 57, 59) ; ninth sternite with narrow side-arms, somewhat elongated ; spermal sac either minute (as in *enormis*, Spencer, 1963B : fig. 1C and *dorsata*) or more normal (as in *admirabilis*, fig. 55).

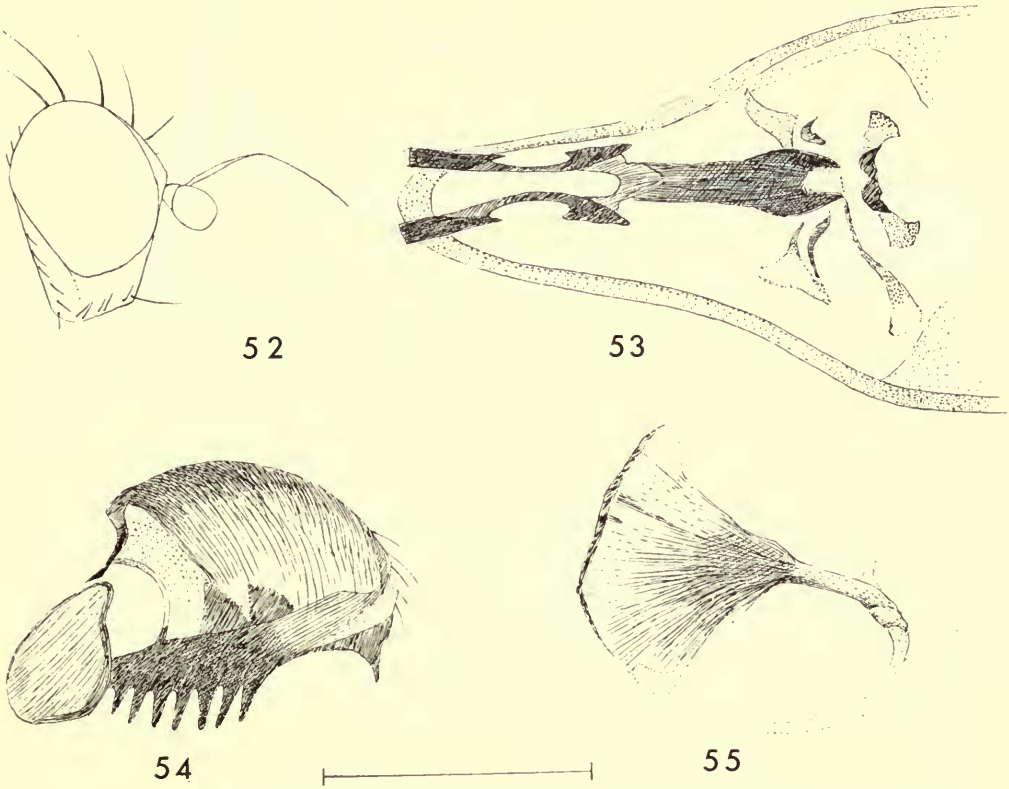
Type species : *Liriomyza enormis* Spencer, 1963B : 114 by present designation.

This genus appears to occupy an intermediate position between *Liriomyza* Mik and *Phytoliriomyza* Hendel. The orbital setulae are intermediate between the distinctly reclinate setulae of *Liriomyza* and the distinctly proclinate setulae of *Phytoliriomyza*. The form of aedeagus approaches that found in some species of *Phytoliriomyza*, such as *P. lurida* Spencer from Brazil (Spencer, 1963C : 379). In many species of *Phytoliriomyza* the halteres are partially darkened. The shape of the head is more typical of *Liriomyza*.

The genus *Lemurimyza* can be included in the author's (1961 : 57) key to Oriental genera by amending and extending couplet 8 as follows : second alternative, for *Liriomyza* Mik read 8A ; add new couplet :

8A Halteres dark brown ; if yellow, orbital setulae incurved, sparse or lacking
Lemurimyza Spencer

— Halteres yellow ; orbital setulae distinctly reclinate . . ***Liriomyza*** Mik



FIGS. 52–55. *Lemurimyza admirabilis* sp. n. : Fig. 52, head ; Fig. 53, aedeagus and ninth sternite, ventral view ; Fig. 54, surstylus ; Fig. 55, spermal sac.
(Scale line represents 0·1 mm. for genitalia drawings).

Four species can immediately be grouped into this genus : *Liriomyza enormis* Spencer from Madagascar ; *L. admirabilis* sp. n. from Nepal described below ; and *Agromyza dorsata* Siebke and *A. pectoralis* Becker from Europe.

These four species can be identified by the following key :

1	Halteres dark, brownish-black	2
—	Halteres pale, yellow	3
2	Third antennal segment yellow	***enormis*** (Spencer)
—	Third antennal segment black	***admirabilis*** sp. n.
3	Palps yellow	***dorsata*** (Siebke)
—	Palps black	***pectoralis*** (Becker)

Lemurimyza enormis (Spencer) comb. nov.

Liriomyza enormis Spencer, 1963B. Holotype ♂ in Musée d'Histoire Naturelle, Paris.

This species was originally placed in *Liriomyza* with some hesitation in view of its dark halteres and aberrant genitalia. With the discovery of a further closely related species in Nepal, with the same essential characters, the erection of a new genus is clearly justified.

Lemurimyza admirabilis s.p. n.

(Text-figs. 52–55)

Head (Text-fig. 52) : frons broad, twice width of eye viewed from above, not projecting above eye in profile ; two equal, reclinate ors, one slightly weaker, incurved ori ; orbital setulae minute, sparse, upright ; third antennal segment rounded, arista long, appearing bare.

Mesonotum : 3 + 1 dorso-centrals, acrostichals sparse, in two rows at front, not extending behind third dc.

Wing : length in male 1·75 mm., costa extending strongly to vein m_{1+2}, discal cell large with vein *rm* at midpoint, last section of vein m_{3+4} not greatly longer than penultimate, in ratio 18 : 13.

Colour : frons and jowls orange yellow, lunule paler, more lemon yellow ; face yellowish-grey ; third antennal segment black, second dark, blackish but distinctly paler with a trace of yellow, third yellow ; mesonotum matt black, with a small oval area adjoining scutellum yellow, not extending to level of first dorso-central ; scutellum yellow centrally, gradually becoming grey laterally ; notopleural area yellow, mesopleura yellow above, black below (exact colour not detectable, owing to damage to specimen) ; sternopleura black below with broad yellow upper margin ; legs appearing entirely black but fore-femora somewhat yellow on inside ; abdomen entirely black ; squamal fringe black ; halteres black.

♂ GENITALIA : aedeagus as in Text-fig. 53 ; distiphallus with paired terminal processes, mesophallus dark, blackish, cylindrical, distinctly broader at base, equal in length to distiphallus ; hypophallus in form of two narrow, somewhat irregular ventral appendages arising from base of mesophallus ; ninth sternite with narrow side-arms, elongate (Text-fig. 53) ; surstyli (Text-fig. 54) a black, comb-like process adjoining ninth tergite, then broadening apically into a large flat plate ; spermal sac with rather broad blade, stalk narrow (Text-fig. 55).

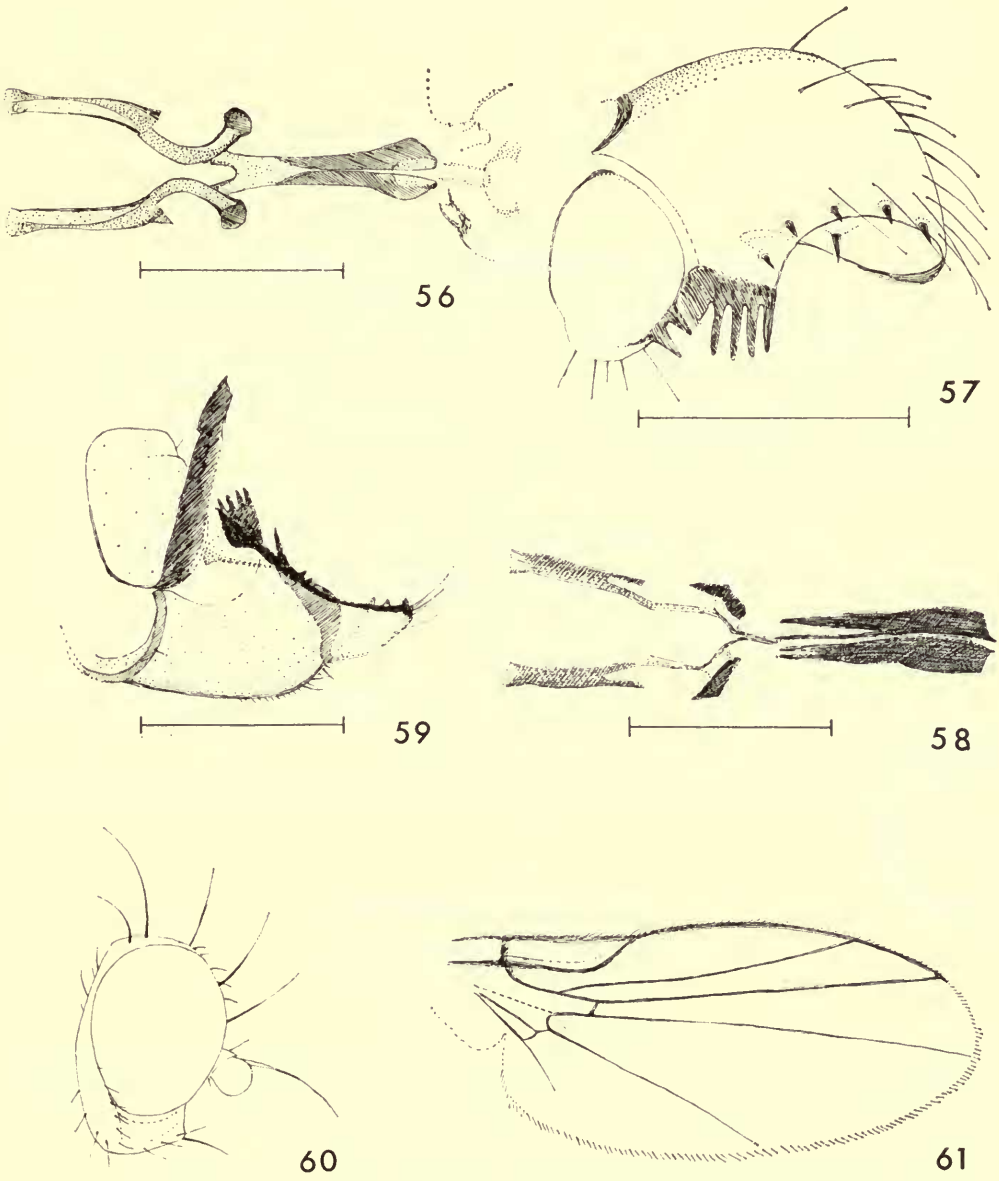
Holotype ♂, NEPAL : Taplejung Distr., river banks below Tamrang bridge, c. 5,500′ x.-xi., 1961 (*R. L. Coe*), in British Museum (Nat. Hist.).

Lemurimyza dorsata (Siebke) comb. nov.

Agromyza dorsata Siebke, 1864. Holotype ♂ in Zoologisk Museum, Oslo.

Liriomyza striata Hendel, 1931-6 : 249. **syn. nov.** Holotype ♀ in Naturhistorisches Museum, Vienna.

Material examined : AUSTRIA : Vienna, meadows beside Danube, 1 ♀, 5.vi. (Hendel), holotype of *striata*. CZECHOSLOVAKIA : Tatra, 1 ♂, genitalia slide 925, 19.vii.1897 (*Kertész*). ENGLAND : Staffs., Madeley, 1 ♂, genitalia slide 880, 25.vii.



FIGS. 56–61. *Lemurimyza dorsata* (Siebke) : Fig. 56, aedeagus, ventral view ; Fig. 57, surstylus ; *Lemurimyza pectoralis* (Becker) : Fig. 58, aedeagus, ventral view ; Fig. 59, surstylus. *Phytomyza nepalensis* sp. n. : Fig. 60, head ; Fig. 61, wing. (Scale line represents 0·1 mm.).

1926 (H. Britten). FINLAND : Helsinki, 1 ♂, genitalia slide 927, no date (*R. Frey*). NORWAY : Jerkin, 1 ♂ (abdomen missing), 27.vii.1853, holotype of *dorsata* ; Fjellfröskvann, 1 ♂, 23.vii.1926 (Rydén, 1957).

The distinctive aedeagus and surstyli of this species are shown in Text-figs. 5, 6.

Hendel (1931-6 : 203) incorrectly synonymized *Agromyza dorsata* with *Phytoliriomyza perpusilla* Meigen. Rydén (1955) similarly synonymized *A. dorsata* with *Phytoliriomyza halterata* Becker, which at that time was thought to be identical with *perpusilla*. This confusion arose understandably from the similarity of these species on external characters. Clarification has only been possible with recent study of the male genitalia.

Lemurimyza pectoralis (Becker) **comb. nov.**

Agromyza pectoralis Becker, 1908 : 167. Holotype ♂ in Zoologisches Museum, Berlin.
Liriomyza pectoralis (Becker) Hendel, 1920 : 144 ; 1931-6 : 241.

I have examined the holotype from the CANARY ISLANDS : Tenerife and the characteristic aedeagus and surstyli are shown in Text-figs. 58, 59.

This species is widespread but local in the Mediterranean area. I caught a series of 12 specimens on the lower slopes of Mt. Etna, Sicily on 8-9.iv.1964.

Genus ***PHYTOLIRIOMYZA*** Hendel

Phytoliriomyza australensis Spencer

Phytoliriomyza australensis Spencer, 1963A : 335.
Phytoliriomyza tahitiensis Sasakawa, 1963. **syn. nov.** [from description and figures].

Arun Valley, East shore of R. Arun below Tumlingtar, c. 1,800′, swept from *Ricinus communis* L., 1 ♂, 23.xii.1961. Taplejung Dist., Sangu, c. 6,200′, mixed vegetation by stream in gully, 2 ♂, xi.1961-i.1962.

This species was previously only known from various localities in New South Wales.

Genus ***PHYTOMYZA*** Fallén

Phytomyza nepalensis **sp. n.**

(Text figs. 60–61)

Head (Text-fig. 60) : frons exceptionally broad, slightly over twice width of eye at foremost ocellus, not significantly projecting above eye in profile ; orbits unusually broad, well-differentiated, two equal, reclinate upper orbital bristles, one similar incurved lower orbital ; eye upright, oval, jowls deepest in centre, one-quarter vertical height of eye, cheeks well-developed below eye ; third antennal segment almost round, arista short.

Mesonotum : acrostichals irregularly in two rows at front, not extending to second dorsocentral ; inner post-alar strong, similar to fourth dc.

Wing (Text-fig. 61) : length 2·1 mm., costal ratio 30 : 12 : 16, second section just less than twice length of fourth.

Colour : an entirely black species ; orbits, mesonotum and abdomen brilliantly shining.

Holotype ♀, Nepal, Taplejung Distr., c. 6,500′, edge of mixed forest above Sangu, 17.x.-1.xi.1961 (*R. L. Coe*), in the British Museum (Natural History).

This species somewhat resembles *Phytomyza hendeli* Hering (cf. Hendel, 1931-6 : 413), a leaf-miner on *Anemone* in Europe but is obviously distinct, in view of its darker head, more shining mesonotum and sparser acrostichals. No comparable black species is known from Japan, nor from the Oriental and Australian regions.

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